Polar RS100™

User Manual

POLAR®

LISTEN TO YOUR BODY

RS100 QUICK GUIDE

WRIST UNIT BUTTONS

Note: *Pressing a button briefly has a different effect than pressing and holding the button for a longer period of time (for at least 1 second).*

Light

- Turn the backlight on.
- Turn the Keylock on or off in Time and Exercise modes (press and hold the button for at least 1 second). Keylock prevents accidental pressing of the buttons.

Stop

- Stop, pause or cancel the function.
- Exit the menu and return to the previous level of the menu.
- Return to the Time mode (press and hold the button for at least 1 second) in all modes except in the exercise mode.
- Enter the Alarm setting mode in the Time mode (press and hold the button for at least 1 second).

▲

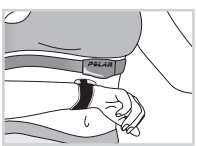
- Move to the next mode or menu level.
- Increase the selected value.
- Change the top row information in the Exercise recording mode and in the Time mode.
- Turn the target zone alarm on or off during Exercise recording mode (press and hold the button for at least 1 second).

▼

- Move to a previous mode or menu level.
- Decrease the selected value.
- Change the lower row information in the Exercise recording mode.

Red button

- Start, enter or accept the function.
- Enter the displayed mode or menu and move to a lower menu level.
- Enter the exercise mode.
- Enter the Exercise recording mode from the Time mode (press and hold the button for at least 1 second).



Heart Touch (hands free button)
To view the time and target zone limits during exercise without pressing buttons, bring the wrist unit near the Polar logo on the transmitter.

CONTENTS

Dear customer,
Congratulations on your purchase of a new Polar RS100 Running Computer!

Your running computer helps you achieve your exercise goals. It provides feedback on your body's response to exercise. The following tasks can be performed with the running computer:

Planning
- Base your training and various exercise sessions on heart rate.

Setting pace and controlling intensity
- Your heart rate is an accurate measure of exercise intensity - it tells you how hard you are working. Use heart rate to set a pace that you are able to maintain.

Keeping safe
- Monitor your heart rate during exercise to keep yourself from pushing too hard or overtraining.

Checking progress
- Your heart rate allows you to objectively measure improvements in your fitness level. For a particular speed and time/distance, your heart rate should decrease with improvements in your fitness.

Adapting to environment
- Your heart rate responds to internal and external factors acting on your body (for example, stress, lack of sleep, altitude and temperature). Using your running computer will help ensure a quality workout in varying conditions.

Read this manual carefully to familiarize yourself with your running computer. This manual also contains a section about maintenance.

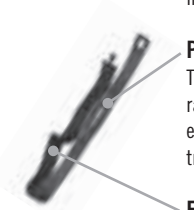
Have success and fun using your running computer!

POLAR

1. INTRODUCTION TO THE RS100 RUNNING COMPUTER

1.1 PRODUCT ELEMENTS
The Polar RS100 Running Computer package consists of the following parts:

Wrist Unit
The wrist unit displays and records your heart rate and exercise data during exercise. Enter your personal settings into the wrist unit and analyze exercise information after your workouts.



Polar Coded Transmitter
The transmitter sends your heart rate signal to the wrist unit. The electrode areas on the back of the transmitter detect your heart rate.

Elastic Strap
The elastic strap holds the transmitter around your chest.

Polar Web Services
www.PolarRunningCoach.com is a complete web service tailored to support your exercise goals. **Free registration** gives you access to the personalized training program, training diary, useful articles and much more. In addition, you can get latest product tips and support online at **www.polar.fi.**

Customer Service, Registration and International Guarantee Information
If your running computer needs repair, send it with the Return Card for service to your Polar Service Center.
By completing the Customer Registration Card you help us ensure the quality of customer support and the development of future Polar products and services.
The Polar two-year guarantee is issued to the original customer/purchaser of the product. Keep the International Guarantee Card as your proof of purchase.

1.2 USING YOUR POLAR RS100 FOR THE FIRST TIME

Enter your settings in the Basic Settings mode (time, date, units and personal settings).

How to enter the Basic Settings

Entering accurate personal information ensures that you receive correct feedback based on your performance (calorie consumption, OwnZone determination etc).

Activate the wrist unit by pressing any button. The wrist unit cannot be turned off once activated.
The display fills with numbers and letters.

1. Press the **Red** button. **Settings** is displayed.
2. Continue by pressing the **Red** button and follow the steps on next page:

Note:

- *The numbers scroll faster if you press and hold the ▲ or ▼ button as you adjust the value.*
- *After a change of battery or after you reset the wrist unit, you only need to set the time and date in Basic Settings. You can skip the rest of the settings by pressing and holding the **Stop** button.*

Tip: You can design and download logos to the display using the Polar UpLink Tool. Download UpLink Tool free of charge at www.polar.fi or www.PolarRunningCoach.com. For further information, see page 47.

The display reads:	Press ▲ or ▼ to set	Press the Red button to accept
3. **Time Set** • 12h / 24h	▲ / ▼ • select 12h or 24h format	**Red** button
• AM / PM (for 12h format)	▲ / ▼ • select AM or PM	**Red** button
• Hours	▲ / ▼ • adjust the hours	**Red** button
• Minutes	▲ / ▼ • adjust the minutes	**Red** button
Note: *The date will be displayed according to the time format selected (24h: day - month - year / 12h: month - day - year).*		
4. **Date Set** • Day / Month	▲ / ▼ • adjust the day (in 24h format) or the month (in 12h format)	**Red** button
• Month / Day	▲ / ▼ • adjust the month (in 24h format) or the day (in 12h format)	**Red** button
• Year	▲ / ▼ • adjust the year	**Red** button

The display reads:	Press ▲ or ▼ to set	Press the Red button to accept
5. **Unit** • Unit 1 (kg/cm) / Unit 2 (lb/ft)	▲ / ▼ • select the units	**Red** button
6. **Weight** • kg / lbs	▲ / ▼ • adjust your weight	**Red** button
Note: *To reselect units, press and hold the* ***Light*** *button in weight or height setting display.*		
7. **Height** • cm / ft	▲ / ▼ • adjust your height	**Red** button
• inch (Unit 2)	▲ / ▼	**Red** button
8. **Birthday** • Day / Month	▲ / ▼ • adjust the day (in 24h format) or the month (in 12h format)	**Red** button
• Month / Day	▲ / ▼ • adjust the month (in 24h format) or the day (in 12h format)	**Red** button
• Year	▲ / ▼ • adjust the year	**Red** button

The display reads:	Press ▲ or ▼ to set	Press the Red button to accept
9. **Sex** • MALE / FEMALE	▲ / ▼ • select sex	**Red** button

- **Settings done** is displayed. To change your settings, press the **Stop** button until you return to the desired setting.
- To accept settings, press the **Red** button or wait until the display automatically goes to Time mode.

2.1 WEARING YOUR TRANSMITTER

To measure your heart rate, you need to wear the transmitter.

1. Attach one end of the transmitter to the elastic strap.

2. Adjust the strap length to fit snugly and comfortably. Secure the strap around your chest, just below the chest muscles, and buckle the strap to the transmitter.

3. Lift the transmitter off your chest and moisten the two grooved electrode areas on the back.

4. Check that the wet electrode areas are firmly against your skin and that the Polar logo is in a central, upright position.

Coded Heart Rate Transmission

Coded heart rate transmission reduces interference from other heart rate monitors that are close by. To make sure that the code search is successful and to ensure trouble-free heart rate monitoring, keep the wrist unit within 1 meter/3 feet of your transmitter. Check that you are not near other people with heart rate monitors or any source of electromagnetic disturbance (for further information on interference, see Precautions on page 50).

A frame around the heart rate symbol indicates a coded heart rate transmission.

A heart rate symbol without a frame indicates a non-coded heart rate transmission. The heart rate measurement functions also in a non-coded mode, especially if there aren't any sources of interface nearby.

Note: *If the wrist unit does not display your heart rate, make sure the transmitter electrodes are moist and that the strap is snug enough. Bring the wrist unit near the Polar logo on the transmitter to restart heart rate detection.*

2.2 EXERCISE RECORDING

There are two modes in the exercise menu: Standby and Recording. In Standby mode, your heart rate is displayed but your exercise is **not recorded**. In Recording mode, exercise is recorded and stopwatch and other functions are activated.

1. Wear the transmitter as described in the section *"Wearing Your Transmitter"* on page 12.
2. Start from the Time mode. Press the **Red** button. The wrist unit will automatically search for your heart rate. The heart rate and the framed heart symbol will appear in 15 seconds.
3. **Standby** text and symbol are displayed. The wrist unit automatically starts to search for your heart rate.
4. Press the **Red** button. Exercise time starts running and exercise recording symbol is displayed. You are now in Recording mode.

Note: *You can review Timer settings (if activated) in* ***Standby*** *mode by pressing ▲. Switch heart rate formats (heart rate as beats per minute or heart rate as a percentage of maximum heart rate; %HR) by pressing ▼.*

Alternatively, you can quickstart exercise recording in Time mode by pressing and holding the **Red** button.

- The Manual target heart rate zone limits are on as default. To change heart rate limits follow instructions on page 29 before starting to exercise.
- If **OwnZone** is selected, the OwnZone determination procedure begins. For further information, see *"Determining Your OwnZone Heart Rate Limits"* on page 31.
- To skip OwnZone determination and use previously determined OwnZone, press the **Red** button when OwnZone symbol OZ ▶ _ _ _ _ appears in the display. If you have not determined your OwnZone before, your age-based target zone will be used.

2.3 FUNCTIONS DURING EXERCISE

Note: *Your exercise information is saved only if the stopwatch has been running for more than one minute or if one lap has been stored.*

Turning the Target Zone Alarm Sound on or off: Press and hold ▲. indicates that the Target Zone Alarm sound is activated.

Target Zone Alarm: With the Target Zone Alarm you can make sure you exercise at the correct intensity. When the target zone heart rate limits are activated, the wrist unit sounds an alarm when you are above or below your limits. You can set the limits for your target zone in the Settings/Limits menu. For further information, see page 29. If you are out of your target zone, the heart rate value starts flashing and the wrist unit beeps with each heartbeat.

Note: *When heart rate limits are not activated, no Target Zone Alarm in the exercise recording mode will sound, nor will target zone information be placed in the Summary File or File.*

Checking Time of Day and Target Zone Limits: Place the wrist unit near the Polar logo on the transmitter. The time is displayed for three seconds and current Target Zone limits for another three seconds.

Changing the upper row information: Press ▲ to view the following options:

Lap time

Time

Calories (Cal)
The kilocalories burnt so far.

or

Timer 1 time*
is displayed when timer 1 is active.

Timer 2 time*
is displayed when timer 2 is active.

** Displayed only if timer is on.*
For further information on timers see page 28.

Note: *If you have not set your personal settings in Basic Settings, calories are not shown and the calories display is skipped.*

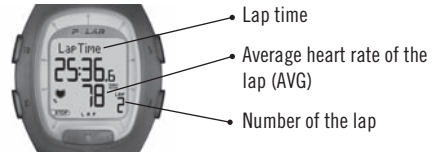
Changing the lower row information: Press ▼ to view the following options:

Heart rate
as beats per minute (bpm)

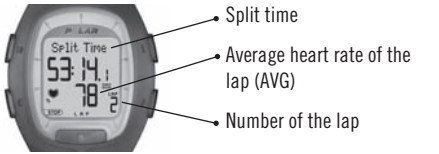
Heart rate
as a percentage of your maximum heart rate (%HR)

Display example
For example, during a road race or a running event it is useful to monitor your *heart rate as a percentage of your maximum heart rate* as well as *time* (lap time on the top row and split time on the middle row).

Storing lap and split time: Press the **Red** button to store lap and split time.



Lap time
Average heart rate of the lap (AVG)
Number of the lap



Split time
Average heart rate of the lap (AVG)
Number of the lap

Lap time indicates elapsed time for one lap. Split time is elapsed time from the beginning of the exercise until storing a lap time (for example from the beginning of the exercise until the 4th lap was stored).

Note: *If the maximum amount of laps (99) is stored,* ***Lap Time FULL*** *text will be displayed. If maximum file recording time (99 hours 59 min 59 s) is exceeded, the wrist unit beeps, pauses recording and displays* ***HALT****.*

Pausing exercise: Press the **Stop** button. Exercise recording, stopwatch and other calculations are paused. You can view the upper row information by pressing ▲. To continue, press the **Red** button.

Exercising in the dark: If you activate the backlight by pressing the **Light** button during an exercise recording, the backlight will reactivate automatically during the same exercise every time you press any button or use the Heart Touch function.

Keylock : Press and hold the **Light** button to lock or unlock all buttons, except the **Light** button. **Locked** or **Unlocked** is displayed. Keylock is useful when engaging sports where you might get accidental button press.

2.4 STOPPING THE EXERCISE AND VIEWING SUMMARY FILE

1. Press the **Stop** button to pause the exercise recording. **Paused** and the Standby symbol ▭ are displayed.
2. Press the **Stop** button. **Summary FILE** is displayed and the following information starts scrolling:

- **Duration** (total exercise time)
- **HR avg** (average heart rate)
- **Limits** (upper and lower limits of your target zone; if limits are set)
- **In Zone** (time spent in your target zone; if limits are set)
- **Cal / Fat%** (accumulated calories burnt during exercise/fat percentage of burnt calories)

The wrist unit returns automatically to Time mode after scrolling through the summary file.

Note: *The alternating information switches automatically on the display. Alternate the information manually by pressing the* ***Red*** *button or stop the review by pressing the* ***Stop*** *button. Detailed exercise information is placed in the File mode.*

3. VIEWING RECORDED INFORMATION - FILE

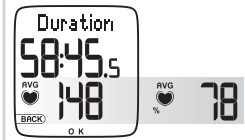
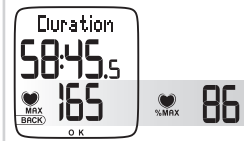
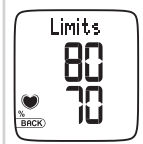
*Press **Red** button*

Time / Date
▲ / ▼
Duration
% / Avg HR /
% / Max HR
▲ / ▼
Limits
▲ / ▼
In / Above / Below
Zone
▲ / ▼
Cal / Fat%
▲ / ▼
Laps

The exercise File allows you to review heart rate and exercise information collected while recording an exercise session. Your exercise information is saved only if the stopwatch has been on for more than one minute or one lap has been restored.

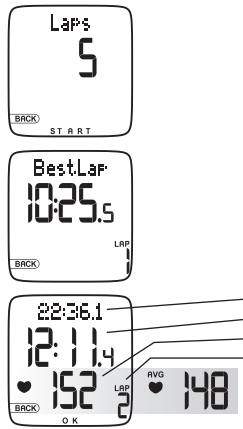
1. In the Time mode, press ▲. **File** is displayed.
2. Press the **Red** button. **Date** and **Time** alternate on the display.
3. Press ▲ / ▼ to browse through the recorded information.

Recorded exercise file information	
	Recording date and exercise starting time alternate on the display
***Note:** The alternating information switches automatically on the display. For quick scrolling, press the **Red** button.*	

Recorded exercise file information	
	Duration of recorded exercise Alternation between: - Average heart rate - % of average heart rate
	- Maximum heart rate - % of maximum heart rate
	The upper and lower limits of your target heart rate zone (if limits are set) ***Note:** The limits of your target heart rate zone are displayed as %HR or as bpm, depending on the heart rate view mode. For further information, see page 17.*

Recorded exercise file information	
	Alternation between: Time spent - in - above - below your target zone during exercise (if limits are set)
	Calories burnt while exercising and fat percentage of burnt calories *

** An estimate of fat consumption is calculated using total kilocalories (Cal) expended during a training session. Fat percentage can vary between 10 and 60%. For example, if total energy expenditure during exercise is 245 Cal and fat percentage is 45%, then 45% of the energy needed for exercise was taken from fat resources and 55% from carbohydrates.*

Recorded exercise file information	
	Number of laps while exercising To view detailed lap information, press the **Red** button. • **BestLap**, lap time and lap number are displayed • Press ▲ / ▼ to scroll through the lap information • To stop viewing lap information, press **Stop** ***Note:*** *The best lap information is displayed if you have stored at least three laps. The best lap cannot be the last lap.* Split time Lap time Average heart rate and heart rate at the end of the lap alternate Lap number

- To return to Time mode, press and hold the **Stop** button.

4. TOTAL VALUES

Total values include cumulative values of information recorded during your training sessions. Use the Total values file as a weekly/monthly counter of your training values. The values are updated automatically, when exercise recording is stopped. This function keeps track of your cumulative values starting from the last reset. For further information on how to reset the values, see page 26.

Note: *If there are no Total values accumulated yet,* ***No Totals*** *is displayed.*

4.1 VIEWING TOTAL VALUES

1. In the Time mode, press the ▲ or ▼ button until **Totals** is displayed.
2. Press the **Red** button. **Tot.Time** and the total time are displayed.
3. Use the ▲ or ▼ button to browse through the following information:

Total values	
	The date cumulation started* Total cumulative exercise duration starting at previous reset

** If no Total values are accumulated yet, the reset date is displayed.*

Total values	
	The date cumulation started* Total cumulative burnt kilocalories (Cal) starting at previous reset
	The date cumulation started* Total cumulative exercise count starting at previous reset
	Reset all Total values. For further information, see page 26.

** If no Total values are accumulated yet, the reset date is displayed.*

- To exit Total values, press the **Stop** button.
- To return to Time mode, press and hold the **Stop** button.

Note: *When the Total values memory become full, the accumulation starts from the 0 again.*

4.2 RESETTING TOTAL VALUES

Use Total values as a seasonal (or weekly/monthly) counter of your exercise values by resetting them once a season. Once reset, a value cannot be retrieved. You can reset one particular value or all values at once (ResetAll?). Start with any display in the previous table (Tot.Time, Tot.Cal, Tot.Count, or ResetAll?).

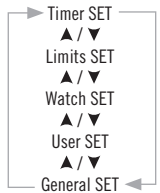
1. Press the **Red** button to start resetting the desired value. **Reset?** is displayed.
2. Press the **Red** button. **Are You Sure** is displayed.
3. If sure, press the **Red** button.

Alternatively, to cancel the reset, press the **Stop** button.

- To return to Time mode, press and hold the **Stop** button.

5. SETTINGS

*Press **Red** button*



You can view or change the settings in the Settings menu.

To set values:

- Select or adjust using ▲ or ▼.
- The numbers scroll faster if you press and hold ▲ or ▼ while adjusting values.
- Accept your selection and go deeper in the menu with the **Red** button.
- Cancel your selection or return to the previous mode or menu by pressing **Stop**.

Tip: Learn how your training can benefit from your running computer's features by consulting the running and training tips at www.PolarRunningCoach.com.

5.1 TIMER SETTINGS

Running intervals is an important part of developing your running performance. Your running computer is equipped with two alternating timers, allowing you to set one repeating or two different alternating time intervals.

Tip: You can set timer 1 for a sprint/run of 4 minutes and timer 2 for a 2-minute recovery.
Once set, the first timer will begin when the stopwatch is started in Recording mode. When Timer 1 is finished the alarm sounds once and Timer 2 automatically starts. When Timer 2 is finished the alarm will sound twice and Timer 1 automatically begins again, and so on.

1. In Time mode, press ▼. **Settings** is displayed.
2. Press the **Red** button. **Timer SET** is displayed.
3. Continue by pressing the **Red** button and follow the steps below:

The display reads:	Press ▲ or ▼ to set	Press the Red button to accept
4. **Timer 1** **On / OFF**	▲ / ▼ • turn the Timer 1 on or off	**Red** button
5. **Minutes**	▲ / ▼ • adjust the minutes (0-99 minutes)	**Red** button
6. **Seconds**	▲ / ▼ • adjust the seconds (0-59)	**Red** button

- To set Timer 2, return to step 4.
- To return to Time mode, press and hold the **Stop** button.

5.2 LIMITS SETTINGS (TARGET HEART RATE ZONE SETTING)

OwnZone

Your running computer is able to determine your individual aerobic (cardiovascular) heart rate zone automatically. This is called OwnZone (OZ). OwnZone ensures that you exercise within safe limits.

Manually set Target Zone

You can create a target heart rate zone by setting upper and lower heart rate limits manually. Use this feature to maintain a particular level of intensity, depending on your objectives.

Deactivate Target Zone Limits

You can also deactivate target zone limits.

1. In the Time mode, press ▼. **Settings** is displayed.
2. Press the **Red** button. **Timer SET** is displayed.
3. Press ▲ until **Limits SET** is displayed.
4. Press the **Red** button. **OwnZone**, **Manual** or **Off** starts flashing.
5. Press ▲ or ▼ to select OwnZone, Manual or Off.
   For further information on OwnZone see page 30, for manual limits see page 34.

5.2.1 OWNZONE LIMITS

The OwnZone (OZ) feature determines your *personal training zone* primarily based on your heart rate variability. For most adults, OwnZone corresponds to 65-85 % of maximum heart rate (HR_{max}). The OwnZone varies daily, depending on your physical condition and mental state (for example, if you are not recovered from the previous training or feel stressed.)

OwnZone limits can be determined in 1-5 minutes during a warm-up period by walking, jogging or doing another sport. If determination based on heart rate variability is not successful, the previous OwnZone limits or your age predicted limits (65-85% of HR_{max}) are used.

(See the steps 1-4 on page 29.)

The display reads:	Press ▲ or ▼ to set	Press the Red button to accept
5. **OwnZone / Manual / Off LIM**	▲ / ▼ • select OwnZone limits	**Red** button
6. **HR / HR %**	▲ / ▼ • select heart rate format: beats per minute or % of your maximum heart rate	**Red** button

- To return to Time mode, press and hold the **Stop** button.

Tip: See www.PolarRunningCoach.com for heart rate based Polar Training Programs.

Determining Your OwnZone Heart Rate Limits

Before you start to determine your OwnZone, make sure that:

- You entered your user settings correctly. The wrist unit will ask for missing information (for example date of birth) before accepting limit settings.
- You activate the OwnZone limits. With the function on, the wrist unit will automatically determine your OwnZone everytime you start recording an exercise session.

You should redefine your OwnZone:

- When changing your exercise environment or exercise mode.
- If you feel unusual about the physical state of your body when starting to exercise. For example you are stressed or not feeling well.

The main idea is that you start your exercise with a warm-up period at a light intensity i.e. heart rate lower than 100 bpm/ 50% HR_{max}. You then gradually increase the intensity of your exercise to raise your heart rate.

1. Start your exercise as described in the section *"Exercise Recording"* on page 14.
2. OwnZone determination begins and the OwnZone OZ▸____ symbol appears in the upper row of the display.

   Alternatively, to skip OwnZone determination and use the previously determined OwnZone, press the **Red** button.

Determination of your OwnZone happens in five stages.

OZ▸____ Walk at a slow pace for 1 min. Keep your heart rate below 100 bpm/ 50% HR_{max} during this first stage. After each stage you will hear a beep (if the sound settings are on) and the display automatically illuminates (if you have switched the backlight on once before), indicating the end of the stage.

OZ▸▸___ Walk at a normal pace for 1 min. Slowly increase your heart rate by 10-20 bpm/ 5% HR_{max}.

OZ▸▸▸__ Walk at a brisk pace for 1 min. Slowly increase your heart rate by 10-20 bpm/ 5 % HR_{max}.

OZ▸▸▸▸_ Jog at a slow pace for 1 min. Slowly increase your heart rate by 10-20 bpm/ 5% HR_{max}.

OZ▸▸▸▸▸ Jog at brisk pace or run for 1 min.

3. At some point during the five stages you will hear two beeps. Your OwnZone has now been determined and you can begin your planned exercise session.
   The OwnZone determination method (see the table on the next page) and OwnZone heart rate limits are displayed.
   The limits are displayed as beats per minute (bpm) or as a percentage of your maximum heart rate (%HR) depending on your settings.

The display reads:	OwnZone determination method	Reasons for using this method
OwnZone	heart rate variability	
If not successful, then		
OZ latest	previous OwnZone based on heart rate variability	• your heart rate variability decreased either too slowly or too fast or • your heart rate exceeded the safety limit of the OwnZone determination
If not successful, then		
AgeBased	age-based heart rate zone (65-85% of HR_{max})	• heart rate variability based OwnZone determination was not successful and no previous OwnZone determination existed

Note: *OwnZone has been developed for healthy people. Some health conditions may cause heart rate variability based OwnZone determination to fail, for example high blood pressure, some cardiac arrhythmias, and some medications.*

You can now continue with your exercise. Try to stay inside the given heart rate zone to maximize exercise benefits.

Tip: For further information on OwnZone, see www.polar.fi and www.PolarOwnZone.com.

5.2.2 MANUAL LIMITS

If you have not entered your date of birth in Basic Settings, the wrist unit will ask for the missing information before accepting the limit settings. The wrist unit displays your previously defined heart rate limits.

Alternatively, if you have not defined the manual limits before, your age-based limits are displayed.

(See steps 1-4 on page 29.)

The display reads:	Press ▲ or ▼ to set	Press the Red button to accept
5. **OwnZone / Manual / Off LIM**	▲ / ▼ • select Manual	**Red** button
6. **HR / HR %**	▲ / ▼ • select heart rate format: beats per minute or % of your maximum heart rate	**Red** button
7. **HighLimit**	▲ / ▼ • adjust the upper limit	**Red** button
8. **LowLimit**	▲ / ▼ • adjust the lower limit	**Red** button

- To return to Time mode, press and hold the **Stop** button.

Instead of determining your target heart rate zone by using OwnZone, you can define your target heart rate limits by using the age formula.

Your target heart rate zone is a range between lower and upper heart rate limits expressed as percentages of your maximum heart rate (HR_{max}) or as beats per minute (bpm). HR_{max} is the highest number of heartbeats per minute during maximum physical exertion. The wrist unit calculates your HR_{max}, using to your age:
Maximum heart rate = 220-age. For more accurate measurement of your HR_{max}, visit your doctor or exercise physiologist for an exercise stress test.

How to use the Target Heart Rate Zones

In exercise, different heart rate zones produce different fitness and health benefits. The heart rate zones that suit you depend on your goal and your basic physical condition.

Tip: For further information on target zones and for a personalized training program, see www.PolarRunningCoach.com.

The table below contains target heart rate zones in beats per minute (bpm) estimated by age in 5-year intervals. Calculate your own HR_{max}, write down your own target heart rate zones and select the ones suitable for your training.

Age	HR_{max}	50-60% of HR_{max}	60-70% of HR_{max}	70-80% of HR_{max}	80-90% of HR_{max}	90-100% of HR_{max}
20	200	100-120	120-140	140-160	160-180	180-200
25	195	98-117	117-137	137-156	156-176	176-195
30	190	95-114	114-133	133-152	152-171	171-190
35	185	93-111	111-130	130-148	148-167	167-185
40	180	90-108	108-126	126-144	144-162	162-180
45	175	88-105	105-123	123-140	140-158	158-175
50	170	85-102	102-119	119-136	136-153	153-170
55	165	83-99	99-116	116-132	132-149	149-165
60	160	80-96	96-112	112-128	128-144	144-160
65	155	78-93	93-109	109-124	124-140	140-155

5.2.3 DEACTIVATE TARGET ZONE LIMITS

Deactivate target heart rate zone limits so no limits are used during exercise and no limit values are calculated in the File.

(See steps 1-4 on page 29.)

The display reads:	Press ▲ or ▼ to set	Press the Red button to accept
5. **OwnZone / Manual / Off LIM**	▲ / ▼ • select Off	**Red** button

- To return to Time mode, press and hold the **Stop** button.

5.3 WATCH SETTINGS

5.3.1 ALARM

1. In Time mode, press ▼. **Settings** is displayed.
2. Press the **Red** button. **Timer SET** is displayed.
3. Press ▲ / ▼ until **Watch SET** is displayed.
4. Continue by pressing the **Red** button and follow the steps below:

The display reads:	Press ▲ or ▼ to set	Press the Red button to accept
5. **Alarm** **Once / Mon-Fri / Daily / Off**	▲ / ▼ • select Alarm mode	**Red** button (Skip step 6 for 24h format)
6. **AM / PM** (for 12h format)	▲ / ▼ • select AM or PM	**Red** button
7. **Hours**	▲ / ▼ • adjust the hours	**Red** button
8. **Minutes**	▲ / ▼ • adjust the minutes	**Red** button

- To return to the Time mode, press and hold the **Stop** button.

Alarm

The Alarm functions in all modes. When the Alarm sounds, **Alarm!** with a flashing backlight is displayed. The alarm will sound for a minute unless you press the **Stop** button. To delay the alarm an extra 10 minutes, press the ▲, ▼ or the **Red** button: **Snooze** is displayed. The alarm will sound again after 10 minutes. To cancel the snooze and Alarm, press the **Stop** button in Snooze mode.

Alternatively, you can quick access Alarm settings in Time mode by pressing and holding the **Stop** button.

Note: *If the battery low symbol appears in the display, the Alarm cannot be activated. However, the Watch Alarm will work once if it is set before the symbol appears.*

5.3.2 TIME SETTING

1. In Time mode, press ▼. **Settings** is displayed.
2. Press the **Red** button. **Timer SET** is displayed.
3. Press ▲ / ▼ until **Watch SET** is displayed.
4. Continue by pressing the **Red** button until **TIME** is displayed and follow the steps below:

The display reads:	Press ▲ or ▼ to set	Press the Red button to accept
5. **Time** **12h / 24h**	▲ / ▼ • select 12h or 24h format	**Red** button (Skip step 6 for 24h format)
6. **AM / PM** (for 12h format)	▲ / ▼ • select AM or PM	**Red** button
7. **Hours**	▲ / ▼ • adjust the hours	**Red** button
8. **Minutes**	▲ / ▼ • adjust the minutes	**Red** button

- To return to Time mode, press and hold the **Stop** button.

5.3.3 DATE SETTING

1. In Time mode, press ▼. **Settings** is displayed.
2. Press the **Red** button. **Timer SET** is displayed.
3. Press ▲ / ▼ until **Watch SET** is displayed.
4. Continue by pressing the **Red** button until **Date** is displayed and follow the steps below:

Note: *The order for setting the date depends on the time format selected (24h: day - month - year / 12h: month - day - year).*

The display reads:	Press ▲ or ▼ to set	Press the Red button to accept
5. **Day / Month**	▲ / ▼ • adjust the day (in 24h format) or the month (in 12h format)	**Red** button
6. **Month / Day**	▲ / ▼ • adjust the month (in 24h format) or the day (in 12h format)	**Red** button
7. **Year**	▲ / ▼ • adjust the year	**Red** button

- To return to Time mode, press and hold the **Stop** button.

5.4 USER SETTINGS

Entering correct personal information ensures that your calorie counter operates with the highest possible degree of accuracy.

1. In the Time mode, press ▼. **Settings** is displayed.
2. Press the **Red** button until **Timer SET** is displayed.
3. Press ▲ / ▼ until **User SET** is displayed.
4. Press the **Red** button to specify the user information settings and follow the steps below:

The display reads:	Press ▲ or ▼ to set	Press the Red button to accept
5. **Weight** **kg / lbs**	▲ / ▼ • adjust your weight	**Red** button
Note: • *The weight and height units depend on your choice in the Units settings. If you previously chose the wrong units, change them in weight and height setting mode by pressing and holding the* ***Light*** *button.* • *To change your settings, press* ***Stop*** *and return to step 4.*		
6. **Height** • **cm / ft** • **inch** (for Unit 2)	▲ / ▼ • adjust your height ▲ / ▼	**Red** button **Red** button

The display reads:	Press ▲ or ▼ to set	Press the Red button to accept
7. **Birthday** • Day / Month	▲ / ▼ • adjust the day (in 24h format) or the month (in 12h format)	**Red** button
• Month / Day	▲ / ▼ • adjust the month (in 24h format) or the day (in 12h format)	**Red** button
• Year	▲ / ▼ • adjust the year	**Red** button
8. **Sex** **MALE / FEMALE**	▲ / ▼ • select gender	**Red** button

The display reads:	Press ▲ or ▼ to set	Press the Red button to accept
9. **HR Max**	▲ / ▼ • adjust this, if you know your **laboratory measured current maximum heart rate value** Your age-predicted maximum heart rate value (220-age) is displayed as a default setting when you set this value for the first time.	**Red** button
10. **HR Sit**	▲ / ▼ • adjust your heart rate value in a sitting position	**Red** button

- To return to Time mode, press and hold the **Stop** button.

Maximum heart rate value (HR_{max})

HR_{max} is used to estimate energy expenditure. HR_{max} is the highest number of heartbeats per minute during maximum physical exertion. HR_{max} is also useful when determining exercise intensity. The most accurate method for determining your individual HR_{max} is to perform a maximal exercise stress test in a laboratory.

Heart rate value in a sitting position (HR_{sit})

HR_{sit} is used to estimate energy expenditure. To determine your HR_{sit} easily, wear your transmitter, sit down and do not engage in any physical activity. After two or three minutes, press the **Red** button in Time mode to view your heart rate. This is your HR_{sit}.

To calculate your HR_{sit}, more precisely, repeat the procedure several times and calculate your average.

5.5 GENERAL SETTINGS

You can view and change the following settings in the General Settings mode:

- sound On or Off
- unit format (kg/cm or lb/ft)

5.5.1 SOUND SETTING

Sound settings include the button sound and Stopwatch sounds.
Sound settings do not affect the watch alarms.

1. In Time mode, press ▼. **Settings** is displayed.
2. Press the **Red** button until **Timer SET** is displayed.
3. Press ▲ / ▼ until **General SET** is displayed.
4. Press the **Red** button and follow the steps below:

The display reads:	Press ▲ or ▼ to set	Press the Red button to accept
5. **Sound On / OFF**	▲ / ▼ • select the sound on or off	**Red** button

- To return to Time mode, press and hold the **Stop** button.

Note: *Wrist unit sounds and the backlight function are turned off when the low battery symbol is displayed. However, the Watch Alarm will work once if it is set before the symbol appears.*

5.5.2 UNIT SETTING

1. In the Time mode, press ▼. **Settings** is displayed.
2. Press the **Red** button until **Timer SET** is displayed.
3. Press ▲ / ▼ until **General SET** is displayed.
4. Press the **Red** button twice and follow the steps below:

The display reads:	Press ▲ or ▼ to set	Press the Red button to accept
5. **Unit kg/cm / Unit lb/ft** **1 / 2**	▲ / ▼ • select unit	**Red** button

Note: *The Unit setting affects to personal information units and watch settings.*

5.6 PERSONALIZE YOUR WRIST UNIT WITH A LOGO

You can personalize your running computer by designing and transfering your own logo to the display of the wrist unit. For this you need the Polar UpLink Tool.

Download the Polar UpLink Tool at www.polar.fi or www.PolarRunningCoach.com. To use the Polar UpLink Tool, you need a PC with a sound card and dynamic loudspeakers or headphones.
See www.polar.fi or www.PolarRunningCoach.com for further instructions.

6. CARE AND MAINTENANCE

Like any electronic device, your Polar Running Computer should be treated with care. The suggestions below will help you fulfill guarantee obligations and enjoy this product for many years to come.

Taking Care of Your Running Computer

- Store your wrist unit and transmitter in a cool and dry place. Do not store them in a damp environment, in non-breathable material (such as a plastic bag or a sports bag) or with conductive material such as a wet towel. Sweat and moisture can keep the transmitter electrodes wet and the transmitter activated, shortening battery life.
- Keep your unit clean. Clean it with a mild soap and water solution. Dry it carefully with a soft towel. Never use alcohol or any abrasive material such as steel wool or cleaning chemicals.
- The operating temperatures are -10 °C to +50 °C / +14 °F to +122 °F.
- Do not expose the running computer to direct sunlight for extended periods, such as by leaving it in a car.
- Do not bend or stretch the transmitter. This may damage the electrodes.
- Do not dry the transmitter in any other way than with a towel. Mishandling may damage the electrodes.

Service

During the two-year guarantee/warranty period we recommend that you service the product at an authorized Polar Service Center only. The warranty does not cover damage or consequential damage caused by service not authorized by Polar Electro.

Transmitter Battery

Contact your authorized Polar Service Center for a replacement transmitter. Polar recycles used transmitters. See your Customer Care and Registration Card for detailed instructions.

Wrist Unit Battery

The estimated average battery life of the wrist unit is two years in normal use (1h/day, 7 days/week). Excessive use of the backlight drains the wrist unit's battery more rapidly. The low battery indicator is displayed when 10-15% of the wrist unit battery capacity is left and the battery should be replaced. Do not open the wrist unit yourself. To ensure water resistance properties and the use of qualified components, the wrist unit battery should be replaced by an authorized Polar Service Center only. At the same time, a full periodic check of the running computer will be done.

Note:

- *The backlight and wrist unit sounds are automatically deactivated when is displayed. However, the Watch Alarm sound works once, if you have activated the Watch Alarm before the symbol appears. The Alarm symbol will also disappear from the display.*
- *In cold conditions the low battery indicator may appear, but the indicator disappears when you return to a normal temperature.*
- *Water resistance cannot be guaranteed after unauthorized service.*
- *After a battery change re-enter time and date settings in Basic Settings. For further information, see page 8.*

7. PRECAUTIONS

INTERFERENCE DURING EXERCISE

Electromagnetic Interference
Disturbances may occur near high voltage power lines, traffic lights, overhead lines of electric railways, electric bus lines or trams, televisions, car motors, bike computers, some motor driven exercise equipment, cell phones, or when you walk through electric security gates.

Exercise Equipment
Several pieces of exercise equipment with electronic or electrical components such as LED displays, motors, and electrical brakes may cause interfering stray signals. To tackle these problems, try the following:

1. Remove the transmitter from your chest and use the exercise equipment as you would normally.
2. Move the wrist unit around until you find an area in which it displays no stray reading or does not flash the heart symbol. Interference is often worst right in front of the display panel of the equipment, while the left or right side of the display is relatively free of disturbance.
3. Put the transmitter back on your chest and keep the wrist unit in this interference-free area as much as possible.
4. If the running computer still does not work with the exercise equipment, this piece of equipment may be electrically too noisy for wireless heart rate measurement.

Crosstalk
When in non-coded mode ♥ the wrist unit picks up transmitter signals within 3 feet/1 meter. Simultaneous non-coded signals from more than one transmitter can cause an incorrect readout.

Using the Polar Running Computer in a Water Environment
Your running computer is water resistant and can be worn when swimming. The running computer is not, however, a diving instrument. To maintain water resistance, do not press the buttons of the wrist unit under water. When measuring heart rate in water you may experience interference for the following reasons:

- Pool water with high chlorine content and seawater are very conductive. The electrodes of a transmitter may short-circuit, preventing ECG signals from being detected by the transmitter.
- Jumping into water or a strenuous muscle movement during competitive swimming may cause water resistance that shifts the transmitter to a location on the body where it ECG signals cannot be picked up.
- The ECG signal strength depends on the individual, and varies depending on the individual's tissue composition.
  The occurrence of problems when measuring heart rate is considerably higher in water.

Minimizing Possible Risks When Exercising
Exercise may include some risk. Before beginning a regular exercise program, it is recommended that you answer the following questions concerning your health status. If you answer yes to any of these questions, we recommend that you consult a doctor before starting any training program.

- Have you been physically inactive for the past 5 years?
- Do you have high blood pressure or high blood cholesterol?
- Do you have symptoms of any disease?
- Are you taking any blood pressure or heart medication?
- Do you have a history of breathing problems?
- Are you recovering from a serious illness or medical treatment?
- Do you use a pacemaker or another implanted electronic device?
- Do you smoke?
- Are you pregnant?

Note that in addition to exercise intensity, medications for heart, blood pressure, psychological conditions, asthma, breathing etc. as well as some energy drinks, alcohol and nicotine may affect your heart rate.

It is important to be sensitive to your body's responses during exercise. If you feel unexpected pain or excessive fatigue when exercising, it is recommended that you stop the exercise or continue at a lighter intensity.

Notice to individuals with pacemakers, defibrillators or other implanted electronic devices. Individuals who have a pacemaker use the Polar Running Computer at their own risk. Before starting use, we always recommend a maximal exercise stress test under a doctor's supervision. The test is to ensure the safety and reliability of the simultaneous use of the pacemaker and the Polar Running Computer.

If you are allergic to any substance that comes into contact with your skin or if you suspect an allergic reaction due to using the product, check the listed materials on page 55. To avoid any skin reaction to the transmitter, wear it over a shirt. However, moisten the shirt well under the electrodes to ensure flawless operation.

The combined impact of moisture and intense abrasion may cause a black color to come off the transmitter's surface, which might stain light-colored clothes.

8. FREQUENTLY ASKED QUESTIONS

What should I do if…

…if I do not know where I am in the menu?
Press and hold the **Stop** button until the time of day is displayed.

…there are no reactions to any buttons?
Reset the wrist unit by pressing the four side buttons simultaneously for two seconds. Set the time and date in the Basic Setting after the reset. Other settings are saved.

…the heart rate reading becomes erratic or extremely high?
Strong electromagnetic signals can cause erratic readings. So move away from possible sources of disturbance such as high-voltage power lines, traffic lights, overhead lines of electric railways or trams, car motors, bike computers, some motor-driven exercise equipment (like fitness testers) or cell phones.
If moving away does not help and the heart rate reading remains erratic, slow down your speed and check your pulse manually. If you feel it corresponds to the high reading on the display, you may be experiencing cardiac arrhythmia. Most cases of arrhythmia are not serious, but consult your doctor nevertheless.

…the heart symbol flashes irregularly?
- Check that your wrist unit is not further than 1 m/3 ft from the transmitter.
- Check that the transmitter has not become loose during exercise.
- Make sure that the electrodes of the transmitter are moistened.
- Make sure that there is no other heart rate transmitter within 1 m/3 ft.
- Cardiac arrhythmia may cause irregular readings. In this case, consult your physician.

…there is no heart rate reading (- -)?
- Check that the electrodes of the transmitter are moistened and that you are wearing it as instructed.
- Make sure the transmitter is clean.
- Check that you are not near high voltage power lines, televisions, cell phones or other sources of electromagnetic interference.
  Also make sure that you are not near (1 m/3 ft) other heart rate monitor users, when starting you exercise recording.
- A cardiac event may have altered your ECG waveform. In this case, consult your physician.

…another person with a running computer or a heart rate monitor is causing interference?
Move away from that person and continue your exercise normally. Alternatively,
1. Take the transmitter off your chest for 30 seconds. Stay away from the person with the other device.
2. Put the transmitter back on and bring the wrist unit up to your chest near the transmitter's Polar logo. The wrist unit will start looking for a heart rate signal again. Continue your exercise normally.

…the low battery symbol ▭ appears?
Usually the first sign of an expired battery is the low battery indicator on the display. For further information, see page 49.

Note: *Due to cold conditions the low battery indicator may appear, but the indicator disappears when you return to a normal temperature.*

…the display is blank?
The running computer is in battery saving mode when it is dispatched from the factory. To activate it, press the **Red** button twice. The Basic Settings starts. For further information, see page 8. Alternatively the battery may be dead (see the next question for further instructions).

…the battery of the wrist unit must be replaced?
We recommend having all service done by an authorized Polar Service Center. This is especially necessary to ensure that the guarantee remains valid and is not affected by incorrect repair procedures performed by an unauthorized agent. Polar Service will test your wrist unit for water resistance after battery replacement and make a full periodic check of the complete running computer set.

9. TECHNICAL SPECIFICATIONS

The Polar Running Computer displays your performance indicators and helps you achieve your personal training goals. It indicates the level of physiological strain and intensity during your exercise. No other use is intended or implied.

Water resistance of Polar products is tested according to International Standard ISO 2281. Products are divided into three different categories according to their water resistance. Check the water resistance category of your Polar product from the chart below. Please note that these definitions do not necessarily apply to products of other manufacturers.

Marking on the case back	Wash splashes, sweat, raindrops etc.	Bathing and swimming	Skin diving with snorkel (no air tanks)	SCUBA diving (with air tanks)	Water resistant characteristics
Water resistant	X				Splashes, sweat, raindrops etc.
Water resistant 50m	X	X			Minimum for bathing and swimming
Water resistant 100m	X	X	X		For frequent use in water but no SCUBA diving

WRIST UNIT

Battery life:	Average 2 years normal use (1h/day, 7 days/week)
Battery type:	CR 2032
Operating temperature:	-10 °C to +50 °C / +14 °F to +122 °F
Wrist strap material:	Polyurethane
Back cover and Wrist strap buckle material:	Stainless steel complying with the EU Directive 94/27/EU and its amendment 1999/C 205/05 on the release of nickel from products intended to come into direct and prolonged contact with the skin.

Water resistant 50m

Watch

Accuracy:	better than ± 0.5 seconds / day at 25 °C / 77 °F temperature.

TRANSMITTER

Battery life:	Average 2500 hours of use
Battery type:	Built-in Lithium Cell
Operating temperature:	-10 °C to +50 °C / 14 °F to 122 °F
Transmitter Material:	Polyurethane

Waterproof

Elastic strap

Buckle material:	Polyurethane
Fabric material:	Nylon, polyester, and natural rubber including a small amount of latex

Heart Rate Monitor

Accuracy:	± 1% or 1 bpm, whichever larger, definition applies to steady state conditions.
Heart rate measuring range:	15-240

File

1 exercise file

Maximum time recorded to file:	99 h 59 min 59 s

Totals

Maximum Tot.Time:	9999 h
Maximum Tot.Cal:	999 999
Maximum Tot.Count:	999 999

10. LIMITED POLAR INTERNATIONAL GUARANTEE

- This limited Polar international guarantee is issued by Polar Electro Inc. for the consumers who have purchased this product in the USA or Canada. This limited Polar international guarantee is issued by Polar Electro Oy for the consumers who have purchased this product in other countries.
- Polar Electro Oy/Polar Electro Inc. guarantees to the original consumer/purchaser of this device that the product will be free from defects in material or workmanship for two years from the date of purchase.
- **Please keep the receipt or International Guarantee Card. This is your proof of purchase!**
- The guarantee does not cover the battery, damage due to misuse, abuse, accidents or non-compliance with the precautions; improper maintenance, commercial use, cracked or broken cases and elastic strap.
- Guarantee does not cover any damage/s, losses, costs or expenses, direct, indirect or incidental, consequential or special, arising out of, or related to the product. During the guarantee period the product will be either repaired or replaced at an authorized Service Center free of charge.
- This guarantee does not affect the consumer's statutory rights under applicable national or state laws in force, or the consumer's rights against the dealer arising from their sales/purchase contract.

CE 0537 This CE marking shows compliance of this product with Directive 93/42/EEC.

Polar Electro Oy is a ISO 9001:2000 certified company.

11. POLAR DISCLAIMER

- The material in this manual is for informational purposes only. The products it describes are subject to change without prior notice, due to the manufacturer's continuous development program.
- Polar Electro Inc./Polar Electro Oy makes no representations or warranties with respect to this manual or with respect to the products described herein.
- Polar Electro Inc./Polar Electro Oy shall not be liable for any damages, losses, costs or expenses, direct, indirect or incidental, consequential or special, arising out of, or related to the use of this material of the products described herein.

This product is protected by one or several of the following patents:
WO96/20640, US6104947, US 6361502, US 6418394, US 6537227, US6714812, FI88972, FR92.09150, GB2258587, HK306/1996, SG9592117-7, US5486818, FI 88223, DE 4215549, FR 92.06120, GB 2257523, HK 113/1996, SG 9591671-4, US 5491474, FI96380, US5611346, EP665947, DE69414362, FI4150, DE20008882.3, FR0006504, US6477397, FI4069, DE29910633, GB2339833, US6272365.
Other patents pending.

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